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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONALD M. CONNELLY JR., KENTON COLEMAN GREEN, DAVID TUNG LEW, KENNETH ROBERT SCHNEEDBELI, and PETER PAUL URBISEL

Appeal 2007-2808
Application 10/828,784[1]
Technology Center 2800

Decided: April 4, 2008

Before KENNETH W. HAIRSTON, JOHN A. JEFFERY, and MARC S. HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1, 3-11, and 13-30.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

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[1] Application filed April 21, 2004. The real party in interest is International Business Machines Corporation.

[2] Claims 2 and 12 have been cancelled.

Appellants' invention relates to an enclosure chassis with damped elements configured to curtail disk drive vibration transmissions while maintaining structural rigidity (Specification 4). The enclosure chassis includes at least one mounting surface having a viscoelastic layer disposed between a first layer and a second layer to reduce vibration transmission (*id.*). A receiver, secured to the mounting surface, positions a storage device carrier to the mounting surface (*id.*). Clip-on damped springs guide the storage device carrier through the receiver (*id.*). A bezel is configured to receive a key in one of a plurality of key positions, each corresponding to a particular disk drive interface (*id.*).

Claims 1 and 18 are exemplary:

1. An enclosure for storing at least one storage device, comprising: an enclosure chassis;

a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface configured to receive a horizontally oriented storage device carrier, the mounting surface having a first layer and a second layer;

a vicoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface; and

a receiver secured to the mounting surface and configured to retain a first storage device carrier substantially perpendicular to the mounting surface.

18. A system for storing at least one storage device, comprising:

an enclosure chassis;

a mounting surface oriented vertically and coupled to the enclosure chassis to form one wall of a drive bay, the mounting surface having a first layer and a second layer and a viscoelastic layer disposed between the first layer and the second layer to reduce vibration propagation throughout the mounting surface, the mounting surface configured to receive and retain less than three storage device carrier substantially perpendicular to the mounting surface;

an interface shelf oriented horizontally and coupled to the enclosure chassis such that the interface shelf isolates horizontal storage device bays above the interface shelf from storage device bays below the interface itself;

a storage device carrier including a bezel, the storage device carrier configured to retain a storage device therein, the storage device having a storage device interface; and

a key irremovably secured to at least one of two positions on the bezel, such that placement of the key into one of the two positions prevents the storage device interface from contacting an incompatible interface upon inserting the storage device carrier into the enclosure chassis.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Anderson	US 6,209,842 B1	Apr. 3, 2001
Pavol	US 6,445,587	Sep. 3, 2002
Polch	US 5,858,509	Jan. 12, 2002
Bell	US 6,775,142 B1	Aug. 10, 2004

Claims 21, 24, 25, and 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Pavol.

Claims 1, 3-6, 8-11, 13, 14, 16, 17, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pavol in view of Anderson.

Claims 22 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pavol in view of Polch.

Claims 7 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pavol in view of Anderson and Polch.

Claims 18 and 28-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pavol in view of Bell.[3]

Claims 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pavol in view of Bell, and Anderson.

Appellants contend, *inter alia*, that Pavol does not teach "a receiver secured to the mounting surface … to retain a first storage device carrier substantially perpendicular to the mounting surface," or "a mounting surface oriented vertically … to receive a horizontally oriented storage device carrier," as the claims require (App. Br. 16). Appellants further argue that Pavol fails to teach an interface shelf within the meaning ascribed to the term by the Specification (App. Br. 19). The Examiner argues that Pavol may fairly be interpreted to teach a vertically oriented mounting surface, horizontally oriented storage device carrier, and an interface shelf (Ans. 3-4).

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details.

[3] We note that the Examiner has withdrawn the rejection of all claims under 35 U.S.C. § 112 (Ans. 3).

ISSUE

There are two principal issues in the appeal before us.

The first issue is whether the Examiner erred in holding that Pavol, or Pavol in combination with Anderson, teaches a vertically oriented mounting surface and a horizontally oriented storage device carrier.

The second issue is whether the Examiner erred in holding that Pavol in combination with Anderson teaches or suggests an interface shelf within the meaning ascribed to the term by the Specification.

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, they have invented a storage device enclosure with vibrational damping capabilities for receiving disk drive storage devices (Specification 1).

2. The enclosure chassis includes at least one mounting surface having a viscoelastic layer disposed between a first layer and a second layer, to reduce vibration propagation throughout the mounting surface(s) (Specification 4).

3. A receiver, secured to the mounting surface within the enclosure chassis and configured to receive a storage device carrier retaining a disk drive, positions the storage device carrier to the mounting surface(s) (Specification 4).

4. Clip-on damped springs are coupled to the storage device carrier for guiding the storage device carrier through the receiver and for coupling the storage device carrier to the mounting surface(s) (Specification 4).

5. A bezel of the storage device carrier is configured to receive a key in one of a plurality of key positions, with each key position corresponding to a particular disk drive interface (Specification 4).

Pavol

6. Pavol teaches a system for housing one or more media drives to attenuate shocks and vibrations for the media drives (col. 2, ll. 14-17).

7. The system includes drive tray housing and one or more drive modules, each adapted to hold one media drive. One or more resilient layers are disposed between the drive tray housing and each drive module to attenuate shocks and vibrations for each drive module (col. 2, ll. 17-21).

8. Each resilient layer has an associated cover layer that supports sliding of the drive modules with respect to the drive tray housing for insertion and removal purposes (col. 2, ll. 24-27).

9. Pavol teaches a mounting surface (Fig. 1, the side walls of drive bay 108) that is vertically oriented. If one rotates the device of Pavol by 90 degrees clockwise, the shorter sides of the drive bay, which may also be considered mounting surfaces, are now vertically oriented.

10. Pavol's storage device carrier (Fig. 3, drive module 106) is vertically oriented. If one rotates the device of Pavol by 90 degrees clockwise, drive module 106 becomes horizontally oriented.

11. The resilient layers 126 provide "horizontal positioning" of the drive module (col. 5, l. 7).

12. Pavol teaches an interface shelf (Fig. 1, not labeled, between the upper and lower storage bays) that isolates bays above the shelf (as oriented in Fig. 1) from bays below the shelf.

Polch

13. Polch teaches a composite shelf in a shelf frame for supporting a plurality of disk drives and for attenuating vibrations in the shelf (col. 1, ll. 63-66).

Anderson

14. Anderson teaches a damping device for a common carrier of data storage disks (col. 2, ll. 17-18).

15. Anderson teaches an enclosure chassis with a receiver secured to a mounting surface (see Fig. 3; col. 3, ll. 50-56), the receiver(s) configured to receive and retain the storage device carriers substantially perpendicular to the mounting surface (col. 3, ll. 50-61).

Bell

16. Bell teaches a magnetic disk drive storage system including a key plate system which protects against insertion of an inappropriate disk drive carrier into the system (col. 1, ll. 11-14).

PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342,

1347, 51 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79, (Fed. Cir. 1994).

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (*citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Piasecki*, 745 F.2d at 1472. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

"[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007) (quoting *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)).

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of *Hotchkiss*, 11 How. 248." *KSR,* 127 S. Ct. at 1739 (citing *Graham v. John*

Deere Co., 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The Court explained:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.*

An improvement in the art is obvious if "it is likely the product not of innovation but of ordinary skill and common sense." *Id.* at 1742.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). The test of obviousness is what the combined teachings would have suggested to those of ordinary skill in the art. *Id.* at 425.

ANALYSIS

Claims 1 and 9

We select claim 1 as representative of this group, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Appellants argue that Pavol does not teach a mounting surface oriented vertically, and configured to receive a horizontally oriented storage device carrier (App. Br. 16-17). The Examiner's position is that Pavol's storage device carrier (i.e., drive module 106) *is* horizontally oriented (Ans. 5), or alternately that it would have been obvious to simply rotate the Pavol device 90 degrees to achieve the claimed invention (Ans. 15).

We agree with the Examiner that Pavol teaches a vertically oriented mounting surface (FF 9). Appellants argue that "horizontally oriented" means that the long side of the rectangle is parallel to the horizon (App. Br. 18), and we agree with Appellants' interpretation. Pavol's storage device carrier (Fig. 3, 106) is therefore *vertically* oriented (FF 10), but becomes horizontally oriented once one rotates the device of Pavol clockwise by 90 degrees. Figure 3 of Pavol shows a mounting surface (128) which, after rotation, is now oriented vertically, and a horizontally oriented storage device carrier (FF 9, 10). Because Pavol describes the resilient layers 126 as providing "horizontal positioning" of the drive module (FF 11), we construe mounting surface 128, which is mounted directly on such a layer, as configured to receive a horizontally oriented storage device carrier. Shelf 130 corresponds to the claimed "second layer" of the mounting surface, and resilient material 126 meets the "viscoelastic layer."

We find that the combination of Pavol and Anderson, including the 90 degree rotation proposed by the Examiner, teaches the claimed invention. We agree with the Examiner that it would have been obvious to modify Pavol to include the rail system of Anderson for the benefit of storage device carriers guided by rails to mate with the connectors of the backplane (Ans.

6). We further conclude that it would have been obvious to the skilled artisan, as a matter of common sense, to rotate the drive tray of Pavol for any number of reasons, including the need to place the device in a space having particular dimensions. *See KSR* at 1742, *supra*. We therefore do not find error in the Examiner's rejection of claims 1 and 9 under 35 U.S.C. § 103.

Claims 4-6, 8, 10, 16, 17

Claims 4-6 and 8 depend from claim 1, and claims 10, 16, and 17 depend from claim 9. The Examiner's rejection of claims 1 and 9 is affirmed, *supra*. No separate argument is advanced for the patentability of claims 4-6, 8, 10, 16, or 17. We therefore do not find error in the Examiner's rejection of claims 4-6, 8, 10, 16, and 17 under 35 U.S.C. § 103.

Claims 3, 11, 13, and 14

Claims 3 and 11 depend from claims 1 and 9, respectively. Each claim further limits its parent claim by reciting an interface shelf oriented horizontally, to isolate storage device bays above the shelf from storage device bays below the shelf. We agree with the Examiner that Pavol teaches an interface shelf (FF 12) that isolates bays above the shelf (as oriented in Fig. 1) from bays below the shelf. Our affirmance of claims 1 and 9, *supra*, requires that the device of Pavol be rotated 90 degrees. Such a rotation, however, would mean that Pavol's interface shelf is oriented vertically, and would isolate storage device bays on the *left* from storage device bays on the *right*. As a result, the combination of Pavol and Anderson does not teach an interface shelf positioned as the claims require. We therefore find error in the Examiner's rejection of claims 3, 11, 13, and 14[4] under 35 U.S.C. § 103.

[4] In the Claims Appendix, claims 13 and 14 depend from canceled claim 12. We treat claims 13 and 14 as if they were written to depend from claim 11.

Claims 7 and 15

Appellants present the same arguments for these claims as presented for claims 1 and 9. Appellants further present individual attacks against the Pavol, Polch, and Anderson references combined by the Examiner to achieve the claimed invention. Because argument with regard to individual references is ineffective to overcome a rejection based upon the combined teachings of those references as a whole (*see In re Keller, supra*), we do not find error in the Examiner's rejection of claims 7 and 15 under 35 U.S.C. § 103.

Claims 21, 24, 25, and 27

Independent claims 21 and 24 stand rejected by the Examiner as anticipated by Pavol. Each claim calls for a vertically oriented mounting surface, a horizontally oriented storage device carrier, and a horizontally oriented interface shelf.

As noted *supra*, Pavol teaches a vertically oriented mounting surface and a horizontally oriented interface shelf, but a *vertically* oriented storage device carrier. Rotation of Pavol's device by 90 degrees, as suggested by the Examiner with regard to claim 1, would produce a vertically oriented interface shelf. As a result, in neither position does Pavol teach every element of the claims at issue. We therefore find error in the Examiner's rejection of claims 21, 24, 25, and 27 under 35 U.S.C. § 102.

Claims 22 and 26

Claims 22 and 26 depend from claims 21 and 24 respectively, and stand rejected as obvious over Pavol in view of Polch. We have reviewed Polch, and find that it does not supply the teachings of a horizontally

oriented storage device carrier, or alternately a horizontally oriented interface shelf, such that Polch would overcome the deficiencies of Pavol with respect to the parent claims, as discussed *supra*. We therefore find error in the Examiner's rejection of claims 22 and 26 under 35 U.S.C. § 103.

Claims 18 and 28-30

Claim 18, like claim 21, requires a vertically oriented mounting surface, a quantity of storage device carriers substantially perpendicular to the mounting surface (i.e., horizontally oriented), and a horizontally oriented interface shelf. For the reasons expressed *supra* with respect to claim 21, we find error in the Examiner's rejection of claim 18 under 35 U.S.C. § 103.

Claims 28-30 depend from claim 24. For the reasons expressed *supra* with respect to claim 24, we find error in the Examiner's rejection of claims 28-30 under 35 U.S.C. § 103.

Claims 19, 20, and 23

Claims 19 and 20 depend from claim 18; claim 23 depends from claim 21. Because we do not sustain the rejection of claim 18 or claim 21, we also do not sustain the rejection of dependent claims 19, 20, and 23, for the same reasons.

CONCLUSION OF LAW

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1, 4-10, and 15-17. Claims 1, 4-10, and 15-17 are not patentable.

We conclude that Appellants have shown that the Examiner erred in rejecting claims 3, 11, 13, 14, and 18-30. On the record before us, claims 3, 7, 11, 13, 14, and 18-30 have not been shown to be unpatentable.

DECISION

The Examiner's rejection of claims 1, 3-11, and 13-30 is affirmed-in-part. No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. 1.136(a)(1)(iv).

AFFIRMED-IN-PART

gvw

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